Recent Studies of Reconnection and Transport in the Standard Nontwist Map A. WURM, Dept. of Physical and Biological Sciences, Western New England College, K. FUCHSS, Fusion Studies, U. of Texas at Austin, A. APTE, Dept. of Mathematics, U. of North Carolina at Chapel Hill, P.J. MORRISON, Fusion Studies, U. of Texas at Austin — Area preserving and symplectic maps have applications in many areas of physics, e.g. the study of magnetic field lines and particle orbits in toroidal plasma devices. An example is the *standard nontwist map* which has been used to model magnetic field lines in reversed magnetic shear profiles. In this map the so-called twist condition is violated along a curve called the shearless curve. Here we report on recent studies[1] of separatrix reconnection, a global bifurcation that changes the phase space topology in the vicinity of the central barrier, and its consequences for global transport. [1] A. Wurm, A. Apte, K. Fuchss, and P.J. Morrison, Chaos. **15**, 023108 (2005)

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